

AMENDMENTS TO THE CLAIMS, COMPLETE LISTING OF CLAIMS
IN ASCENDING ORDER WITH STATUS INDICATOR

Please amend the following claims as indicated.

1. (Canceled).

Claims 2-18 (Canceled).

19. (Previously Presented) A displacement detector comprising:

a constant-current supply unit configured to output a constant current including an alternating current;

a coil portion, to which the constant current is supplied;

a magnetic core supported to be movable relative to said coil portion in a movable range; and

a signal processing circuit configured to determine a displacement of said core to said coil portion in accordance with a change in output voltage of said coil portion under a condition of supplying the constant current to said coil portion;

wherein said signal processing circuit comprises:

(a) a peak-hold circuit which defines a characteristic-value extracting unit configured to extract a characteristic value from the output voltage of said coil portion,

(b) a level shift circuit configured to add a level shift voltage to the characteristic value,

(c) an A/D conversion circuit disposed between said peak-hold circuit and said level shift circuit and configured to convert the characteristic value into a digital signal, and

(d) a temperature compensation circuit configured to perform a temperature compensation to an output of said level shift circuit;

wherein a fluctuation width of temperature coefficient of a total of the characteristic value and the level shift voltage in said movable range is smaller than the fluctuation width of temperature coefficient of the characteristic value in said movable range.

Claims 20-27 (Canceled).

28. (Previously Presented) A displacement detector comprising:

a constant-current supply unit configured to output a constant current including an alternating current;

a coil portion, to which the constant current is supplied;

a magnetic core supported to be movable relative to said coil portion in a movable range;

and

a signal processing circuit configured to determine a displacement of said core to said coil portion in accordance with a change in output voltage of said coil portion under a condition of supplying the constant current to said coil portion;

wherein said signal processing circuit comprises:

(a) a peak-hold circuit which defines a characteristic-value extracting unit configured to extract a characteristic value from the output voltage of said coil portion,

(b) a level shift circuit configured to add a level shift voltage to the characteristic value,

and

(c) a temperature compensation circuit configured to perform a temperature compensation to an output of said level shift circuit;

wherein a fluctuation width of temperature coefficient of a total of the characteristic value and the level shift voltage in said movable range is smaller than the fluctuation width of temperature coefficient of the characteristic value in said movable range.

29. (Currently Amended) A displacement detector comprising:

a constant-current supply unit configured to output a constant current including an alternating current;

a coil portion, to which the constant current is supplied;

a magnetic core supported to be movable relative to said coil portion in a movable range;

and

a signal processing circuit configured to determine a displacement of said core to said coil portion in accordance with a change in output voltage of said coil portion under a condition of supplying the constant current to said coil portion;

wherein said signal processing circuit comprises:

(a) a peak-hold circuit which defines a characteristic-value extracting unit configured to extract a characteristic value from the output voltage of said coil portion, and

(b) a temperature compensation circuit configured to perform a temperature compensation to an output of said peak-hold circuit;

wherein the signal processing circuit is configured to add a level shift voltage to the characteristic value,

wherein said temperature compensation circuit is configured to perform said temperature compensation to the shifted characteristic value, and

wherein a fluctuation width of temperature coefficient of a total of the characteristic value and the level shift voltage in said movable range is smaller than the fluctuation width of temperature coefficient of the characteristic value in said movable range.

30. (Currently Amended) The displacement detector as set forth in claim 29, further comprising a level shift circuit which is disposed between said coil portion and said peak-hold circuit and configured to add a said level shift voltage to the characteristic value.

31. (New) The displacement detector as set forth in claim 19, wherein said coil portion comprises a curved coil having a curvature, said core has a same curvature as said curved coil, and is rotatable about a rotation axis, and

an insertion amount of said core into said curved coil is changed by rotating said core about the rotation axis.

32. (New) The displacement detector as set forth in claim 19, wherein said coil portion has a curved coil having a curvature, and said curved coil is fixed to a housing having a unit configured to adjust a change in curvature of said curved coil.

33. (New) The displacement detector as set forth in claim 19, wherein
said core is provided by a plurality of curved cores having a same curvature, which are supported to be rotatable about a single rotation axis,
said coil portion comprises a plurality of coils having a same curvature as said curved cores, which are spaced from each other in the axial direction of the rotation axis, and
insertion amounts of said curved cores into said coils are changed by rotating said curved cores about the rotation axis.

34. (New) The displacement detector as set forth in claim 19, wherein
said coil portion is provided by a pair of inner and outer coils having different curvatures, which are disposed to be curved in substantially parallel with each other,
said core comprises a first core curved at a same curvature as said inner core and supported to be rotatable about a rotation axis, and a second core curved at a same curvature as said outer core and supported to be rotatable about the rotation axis,
an insertion amount of said first core into said inner core is changed by rotating said first core about the rotation axis, and
an insertion amount of said second core into said outer core is changed by rotating said second core about the rotation axis.

35. (New) The displacement detector as set forth in claim 19, wherein said signal processing circuit comprises a signal compensation circuit composed of an A/D conversion circuit configured to convert a peak value of the output voltage of said coil portion into a digital signal, and a compensation circuit configured for digital trimming said digital signal.